

simple negation of that which constitutes the difficulty. On the other hand, such a "crystalline orb" or "*firmament*" of solid matter conceived as a hollow shell of sufficient strength to sustain the internal *tension*, and filled with a medium *attractively, and not repulsively elastic*, might realize (without supposing a solid structure in the contained ether) the condition of transverse vibration; by establishing, *ipso facto*, lines of *tension* in every possible direction, along which undulations might be conveyed, like waves along a stretched cord, thus furnishing a fourth hypothesis, which, to those fond of such speculations may afford matter, *sui generis*, for consideration.

(69.) *Interference of the rays of light.* There is hardly a more beautiful or a more instructive object in nature than a large well-blown soap-bubble. Whether we consider the perfect regularity of its form, illustrating, as it does, in its exact equilibration the great mechanical laws to which the sun and planets owe their spherical figure—demonstrating, by its resistance to disruption by blasts of wind which distort it, and by its ready and complete resumption of its normal shape on their cessation, the powerful tensile force which holds it together; and proving, by the instantaneous collection of its filmy tissue into water-globules, in the act of bursting, the immense intrinsic energy of that force as compared with gravitation—to the mechanician it is fraught with matter of the highest interest. To the photologist, on the other hand, the vivid colours which glitter on its surface afford at once the simplest and most elegant optical illustra-